

JOB COMPLETION REPORT  
INVESTIGATIONS PROJECT

State of Montana Name Western Montana Fishery Study  
Project No. F-24-D-7 Title Statewide Lake & Stream Rehabilitation -  
Job No. Upsata Lake

Period Covered: September 15 through September 30, 1957

Abstract: Upsata Lake, located approximately 50 miles northeast of Missoula, Montana was rehabilitated on September 19 and 20, 1957. A total of 495 gallons of Chem Fish Regular and 75 gallons of Chem Fish Special was applied to the 89-acre lake.

Two 30-foot spray booms and one spray nozzle, mounted on out-board motor boats, were used to apply the toxicant.

Objectives: The objectives of this job were to remove the existing population of yellow perch from Upsata Lake and to restock the lake with rainbow trout.

Techniques Used: Upsata Lake covers an area of 89-surface acres and contains 1217-acre feet of water. The maximum depth of the lake is 40 feet; however, the greater portion is 25 feet deep, or less.

Prior to the rehabilitation, four 125-foot gill nets were placed in Upsata Lake and "fished" overnight. These nets were placed in water ranging from 10 to 40 feet in depth. A repeat netting in the same locations was carried out after the lake had been toxified.

On September 18 the lake was marked into sections and the 20-foot contour line was marked off by buoys. Water volumes and toxicant amounts for each section were calculated.

Two types of toxicant were applied to Upsata Lake. Chem Fish Special, a deep water toxicant, was applied at the rate of 0.7 parts per million to all water within the 20-foot contour line. A total of 75 gallons of this toxicant was used. Chem Fish Regular was applied over the entire lake at the rate of 1.4 parts per million, 0.7 parts per million of the Chem Fish Regular was applied on the first day of the rehabilitation (September 19) and the other 0.7 parts per million applied the following day (September 20).

A total of 495 gallons of Chem Fish Regular was applied to the lake.

Two 30-foot spray booms and one nozzle spray, mounted on outboard motor boats, were used to apply the toxicant. The nozzle spray was used to cover the weedy shoreline areas, which were inaccessible to the spray booms.

The toxicant was mixed with lake water at the rate of 1:10 as it was being applied.

Findings:

On September 19 and 20, 1957, Upsata Lake was rehabilitated. A total of 570 gallons of toxicant was applied to the lake.

Yellow perch were noted in distress within 30 minutes after the toxicant application was started, and these fish continued to die throughout the time the toxicant was being applied. Yellow perch were the only fish species observed.

Four overnight gill net sets, made prior to the rehabilitation contained four to thirty fish (yellow perch) per net set. These same net sets were repeated shortly after the rehabilitation and no fish were taken.

A vertical temperature series was taken several days before the rehabilitation began and showed a rather indefinite thermocline present at 20 to 30 feet. During the application of the toxicant, surface temperature ranged from 56° to 58°F.

Restocking of the lake with rainbow trout fry will be carried out this spring (1958) at State expense.

Recommendations:

It is recommended that Upsata Lake be planted with rainbow trout fry (500/lb. or larger) in 1958 and periodically thereafter, as the need arises. Yearly population samples should be made with gill nets to determine the effectiveness of the rehabilitation project and the necessity for future plantings.

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Date April 25, 1958